ANDROX 3.5“ Display System Installation Manual

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Reshipment

If you return the ANDROX® system to EMTrust please remove all connections and peripheral equipment.

Protect the unit through a suitable packaging, preferably use the original packaging.

Packaging

The ANDROX® system is in a protective package to avoid damage during transport.

This protective package should be environmental friendly recycled after use.

Disposal of Device

At the end of the lifetime please dispose and/or recyle the components of the device accordingly.

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Required Tools

For the installation of the ANDROX® system the following standard tools are recommended:

1 - Frame assembly: Tools for measuring, marking and cutting out. Torx screwdriver T9

2 - Rail mounting: Torx screwdriver T9

3 - Cable connection: Slot screwdriver, blade width 2,5 mm

Other required tools are depending on the installation place and method.

External Notice

All external documentation to install the ANDROX® system should be obeyed.

Software and Support

A pre-configured Android™ system is available on microSD card from EMTrust.

For more information how to buy it please contact „sales@emtrust.de“.

For technical support contact „androx@emtrust.de“.

Install and Connection Regulations

The current safety regulations at the place of installation as well as all other measures of safety must be applied.

Do not apply power to the device for the duration of the installation.

The connector X18 is able to handle voltages up to 250VAC or 220VDC. If voltages higher than the maximum supply voltage of the device (8-28VDC) are used at this connector, the connection must only be made by professional experts.

Used Symbols

Marks warnings which you should follow for your own safety and the safety of others.

The attention to those warning notices preserves the ANDROX® system from damages.

Provides information for the optimum use of the ANDROX® system.

Purpose

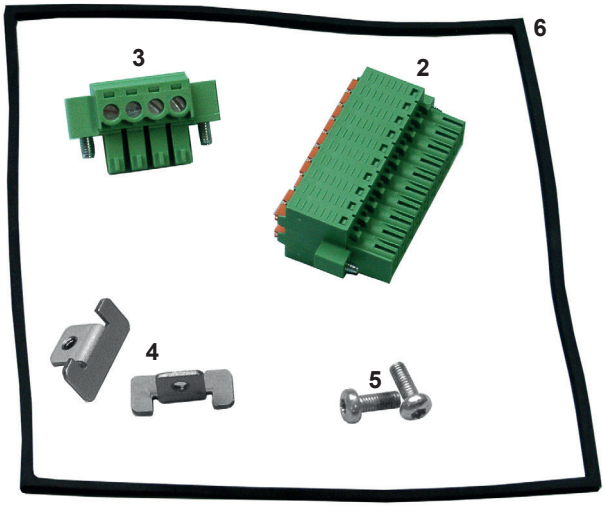
ANDROX® is a 3.5“ touch screen system for low-voltage range. It was designed for the installation in a switchboard or frame. The front-side is IP65 protected.

The main field of use is the supervision, measurement or control of objects and peripheral devices, as well as the storage and transfer of information.

Scope of Delivery

Before beginning the installation, please check the completeness of your delivery!

1 - ANDROX® system
2 - 20-pole plug (grid 3.5)
3 - 4-pole plug (grid 3.81)
4 - 2x Holder for frame assembly
5 - 2x screw M3X10
6 - Gasket 95.4x95.4x2 (mm)
7 - Installation- and user manual
8 - MicroSD-card (option)
9 - DIN rail holder (option)



Frame Assembly

Depending on the type of installation and the space available it could be necessary to insert the microSD-Cards and establish all connections in advance.

For further information please see the operation manual.

For frame assembly, wall strengths of 1.5 mm to 6 mm are supported. The torque for fastening is 0.35 Nm.

We recommend the following procedure:

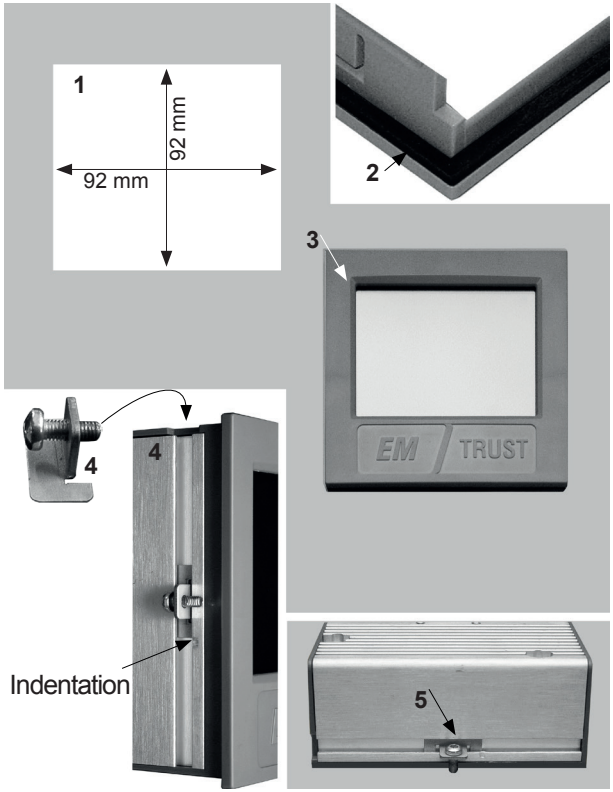
1 - Cut out an area of 92 mm x 92 mm (+0.8/ -0.0 mm).

2 - Add the gasket to the system frame.

3 - Place the ANDROX® system in the cut out area.

4 - Insert the system holders from above. The holders will stay in place at the middle of the system.

5 - Fix the system with two screws M3x10mm to the frame.



Rail Mounting optional accessory

The system can be mounted on a hat-rail when using the optional holder. Please follow the instructions below:

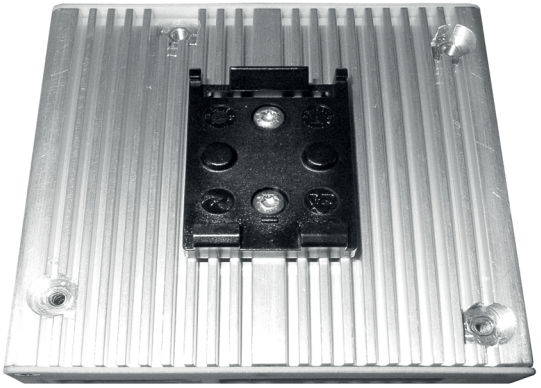
- Mount the hat-rail holder at the back of the ANDROX ® system with 2 screws M3 x 8mm. The hat-rail holder is suitable for „TS 35“ type hat-rails.

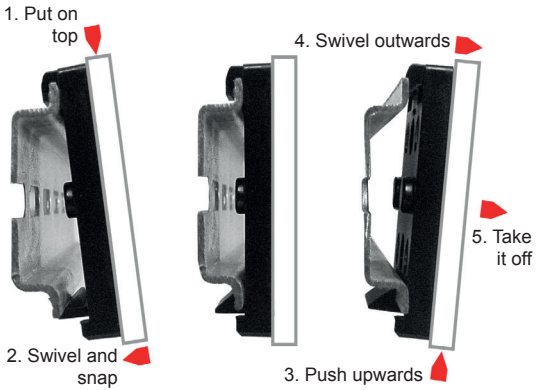
Placing the system on the hat-rail:

- Put the system on top on the hat-rail. Swivel it inwards until it snap securely.

Removing the system from the hat-rail:

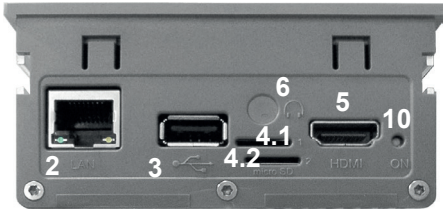
- Push the system upwards from the bottom. Swivel it outwards and take it off.





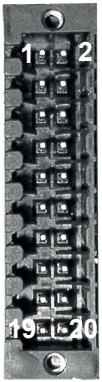
Operating Elements and Interfaces

1 - **TFT** Touchscreen 3,5“
2 - **LAN** Ethernet 10/100/1000 Mbits/s (RJ45)
3 - USB 2.0 Type A female connector / Host Port
4 - **microSD** 2.0 Card Slot (2x)
4.1 Slot 1 (operating system)
4.2 Slot 2 (optional data)
5 - **HDMI** 1.4
6 - No use
7 - **X19** IO connector for temperature sensor, RS485, RS232, CAN, GPIO, PVIN, PWM, Power
8 - **X18** 2x Switch-Relay
9 - USB 2.0 Mini-B female connector / on-the-go
10 - **ON** Switch / System switch on/off



Pin Assignment X19

Pin	Signal	Description
1	THERM_SENSE_N	Temperature Sensor
3	THERM_SENSE_P1	
5	RS485_RX_P	Serial Interface 2
7	RS485_RX_N	
9	RS232_TXD	Serial Interface 1
11	RS232_RTS_m	
13	GPO_0	Open drain,
15	GPO_1	High max. Vin, 5mA
17	GND_IN	DC -
19	PVIN	DC +

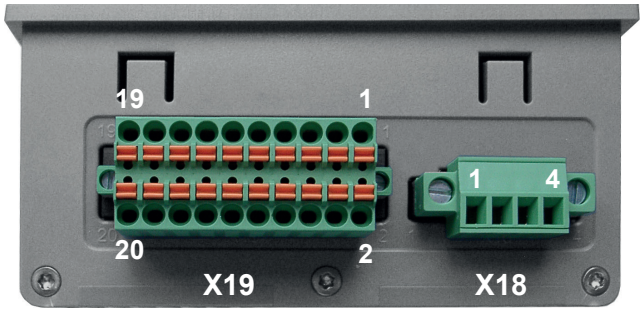


Pin Assignment X19

Pin	Signal	Description
2	THERM_SENSE_P2	Temperature Sensor
4	PWM_OUT	OD, High max. Vin, 5mA
6	RS485_TX_N	Serial Interface 2
8	RS485_TX_P	
10	RS232_RXD	Serial Interface 1
12	RS232_CTS_m	
14	GPI_0	Low max. 3V,
16	GPI_1	High max. Uin
18	CAN_P	High speed CAN,1Mb/s
20	CAN_N	

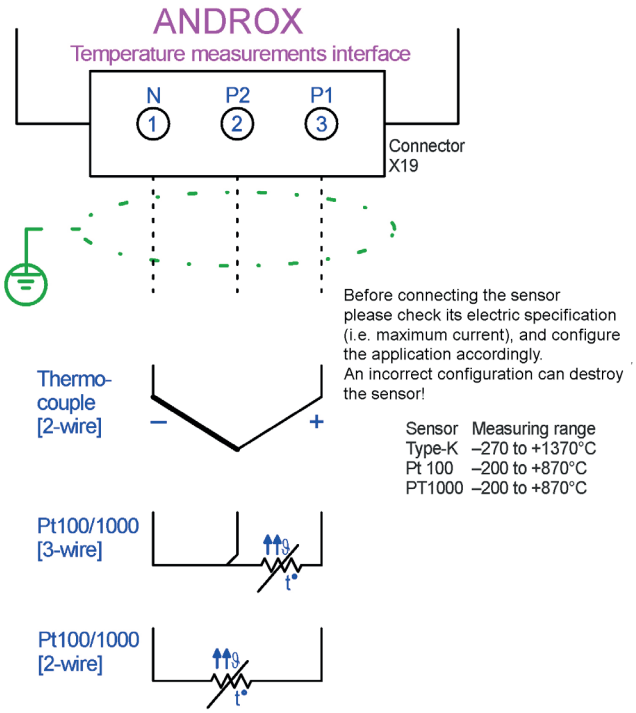
Pin Assignment X18

Pin	Signal	Description
1	Relay1	220VDC, 250VAC, 2A max,
2		no fuse - input fuse necessary
3	Relay 2	220VDC, 250VAC, 2A max,
4		no fuse - input fuse necessary



Connecting different Temperature Sensors

- Thermocouple 2-wire
- Pt100/1000 3-wire
- Pt100/1000 2-wire



Before connecting the sensor please check its electric specification (i.e. maximum current), and configure the application accordingly.
An incorrect configuration can destroy the sensor!

Sensor	Measuring range
Type-K	–270 to +1370°C
Pt 100	–200 to +870°C
PT1000	–200 to +870°C

Technical Data

- 3.5“ TFT-display with resistive touch sensor (touch-screen) and LED backlight
- Resolution 320x240 Pixel / 24Bit RGB
- Luminance, typical 320 cd/m²
- Processor: Freescale i.MX 6Solo, 800MHz
- RTC / Realtime Clock with battery backup. Battery lifetime min. 5 years
- Memory: 1GB DDR3L RAM, 800MT/s
- 2x microSD 2.0 card slot (Mass storage)
- Graphics Output: HDMI 1.4 (Maximum resolution 1920x1080@60Hz)
- Ethernet: 10/100/1000 Mbit/s (Gbit Ethernet is limited to maximum 480 MBit/s)
- USB 2.0 Type A female connector / Host Port
- USB 2.0 Mini-B female connector / on-the-go /Client Port
- Serial Interface: RS232 (4-pin for TxD, RxD, CTS and RTS) and RS485
- CAN Interface: FlexCAN, up to 1Mb/s
- Interface for temperature sensors (e.g. RTD and Thermocouple
- PWM Output, OD, High max. Vin, 5mA
- Digital Input and Output (2x IN and 2x OUT)
- Switch-Relay, max. 220VDC, 250VAC, 2A
- Power Supply: Nominal 12/24 VDC, 8 V (min) to 28 V (max)
- Ambient temperature 0°C to 60°C
- Storage temperature -20°C to 80°C
- Humidity non condensing < 75%
- Dimension approximately 96x96x47 (mm)
- Weight approximately 300 g

Terminology

AC	Alternating Current.
CAN	Controller Area Network - Serial Network.
COM	Serial Communication Port - Serial Interface.
CPU	Central Processing Unit.
DC	Direct Current.
DDR3	Third generation „Double Data Rate“ SDRAM storage technology.
EMI	Electromagnetic Interference.
Gigabit Ethernet	Ethernet-connection with a transfer rate up to 1000Mbit/s.
GND	Chassis ground.
GPIO	General-purpose input/output.
Host	A network host or other device connected to a computer network.
HDMI	High Definition Multimedia Interface.
IP65	Dust tight and water jets protection.
LAN	Local Area Network.
LED	Light Emitting Diode.
MicroSD	Memory card format 11x15x0,7mm.
PWM	Pulse-Width Modulation.
RTD	Resistance temperature detector (e.g. PT100).
RS-232	Recommended Standard-232.
RS-485	Recommended Standard-485.
TFT	Thin-Film-Transistor.
TSP	Touch Screen Panel.
USB	Universal Serial Bus.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